ATTORNEY DOCKET NO. 21108.0040U1

SEQUENCE LISTING

<110> Kyrkanides, Stephanos

<120> VECTORS HAVING BOTH ISOFORMS OF
BETA-HEXOSAMINIDASE AND USES OF THE SAME

<130> 21108.0040U1

<140> Unassigned
<141> 2004-02-18

<150> PCT/US03/13672
<151> 2003-05-03

<150> 60/377,503
<151> 2002-05-02

<160> 71

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 409
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 1

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Met Met Thr Ser Val Tyr Ser Ser Leu Arg Leu Ser Gly Glu Leu Ser
 1               5                  10                  15
Glu Val Trp Arg Leu Leu Ala Ser Leu Phe Gly Asn Leu Leu Arg Ala
            20                  25                  30
Gln Phe Phe Ile Asn Lys Thr Glu Ile Glu Asp Phe Pro Arg Phe Pro
        35                  40                  45
His Arg Gly Leu Leu Leu Asp Thr Ser Arg His Tyr Leu Pro Leu Ser
    50                  55                  60
Ser Ile Leu Asp Thr Leu Asp Val Met Ala Tyr Asn Lys Leu Asn Val
65                  70                  75                  80
Phe His Trp His Leu Val Asp Asp Pro Ser Phe Pro Tyr Glu Ser Phe
                85                  90                  95
Thr Phe Pro Glu Leu Met Arg Lys Gly Ser Tyr Asn Pro Val Thr His
            100                 105                 110
Ile Tyr Thr Ala Gln Asp Val Lys Glu Val Ile Glu Tyr Ala Arg Leu
        115                 120                 125
Arg Gly Ile Arg Val Leu Ala Glu Phe Asp Thr Pro Gly His Thr Leu
    130                 135                 140
Ser Trp Gly Pro Gly Ile Pro Gly Leu Leu Thr Pro Cys Tyr Ser Gly
145                 150                 155                 160
Ser Glu Pro Ser Gly Thr Phe Gly Pro Val Asn Pro Ser Leu Asn Asn
                165                 170                 175
Thr Tyr Glu Phe Met Ser Thr Phe Phe Leu Glu Val Ser Ser Val Phe
            180                 185                 190
Pro Asp Phe Tyr Leu His Leu Gly Gly Asp Glu Val Asp Phe Thr Cys
        195                 200                 205
```

```
Trp Lys Ser Asn Pro Glu Ile Gln Asp Phe Met Arg Lys Lys Gly Phe
    210                 215                 220
Gly Glu Asp Phe Lys Gln Leu Glu Ser Phe Tyr Ile Gln Thr Leu Leu
225                 230                 235                 240
Asp Ile Val Ser Ser Tyr Gly Lys Gly Tyr Val Val Trp Gln Glu Val
                245                 250                 255
Phe Asp Asn Lys Val Lys Ile Gln Pro Asp Thr Ile Ile Gln Val Trp
            260                 265                 270
Arg Glu Asp Ile Pro Val Asn Tyr Met Lys Glu Leu Glu Leu Val Thr
        275                 280                 285
Lys Ala Gly Phe Arg Ala Leu Leu Ser Ala Pro Trp Tyr Leu Asn Arg
    290                 295                 300
Ile Ser Tyr Gly Pro Asp Trp Lys Asp Phe Tyr Ile Val Glu Pro Leu
305                 310                 315                 320
Ala Phe Glu Gly Thr Pro Glu Gln Lys Ala Leu Val Ile Gly Gly Glu
                325                 330                 335
Ala Cys Met Trp Gly Glu Tyr Val Asp Asn Thr Asn Leu Val Pro Arg
            340                 345                 350
Leu Trp Pro Arg Ala Gly Ala Val Ala Glu Arg Leu Trp Ser Asn Lys
        355                 360                 365
Leu Thr Ser Asp Leu Thr Phe Ala Tyr Glu Arg Leu Ser His Phe Arg
    370                 375                 380
Cys Glu Leu Leu Arg Arg Gly Val Gln Ala Gln Pro Leu Asn Val Gly
385                 390                 395                 400
Phe Cys Glu Gln Glu Phe Glu Gln Thr
                405
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<210> 2
<211> 2256
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 2

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cctccgagag gggagaccag cgggccatga caagctccag gctttggttt tcgctgctgc      60
tggcggcagc gttcgcagga cgggcgacgg ccctctggcc ctggcctcag aacttccaaa     120
cctccgacca gcgctacgtc ctttacccga acaactttca attccagtac gatgtcagct     180
cggccgcgca gcccggctgc tcagtcctcg acgaggcctt ccagcgctat cgtgacctgc     240
ttttcggttc cgggtcttgg ccccgtcctt acctcacagg gaaacggcat acactggaga     300
agaatgtgtt ggttgtctct gtagtcacac ctggatgtaa ccagcttcct actttggagt     360
cagtggagaa ttataccctg accataaatg atgaccagtg tttactcctc tctgagactg     420
tctggggagc tctccgaggt ctggagactt ttagccagct tgtttggaaa tctgctgagg     480
gcacagttct ttatcaacaa gactgagatt gaggactttc cccgctttcc tcaccggggc     540
ttgctgttgg atacatctcg ccattacctg ccactctcta gcatcctgga cactctggat     600
gtcatggcgt acaataaatt gaacgtgttc cactggcatc tggtagatga tccttccttc     660
ccatatgaga gcttcacttt tccagagctc atgagaaagg ggtcctacaa ccctgtcacc     720
cacatctaca cagcacagga tgtgaaggag gtcattgaat acgcacggct ccggggtatc     780
cgtgtgcttg cagagtttga cactcctggc cacactttgt cctggggacc aggtatccct     840
ggattactga ctccttgcta ctctgggtct gagccctctg gcacctttgg accagtgaat     900
cccagtctca ataataccta tgagttcatg agcacattct tcttagaagt cagctctgtc     960
ttcccagatt tttatcttca tcttggagga gatgaggttg atttcacctg ctggaagtcc    1020
aacccagaga tccaggactt tatgaggaag aaaggcttcg gtgaggactt caagcagctg    1080
gagtccttct acatccagac gctgctggac atcgtctctt cttatggcaa gggctatgtg    1140
gtgtggcagg aggtgtttga taataaagta aagattcagc cagacacaat catacaggtg    1200
tggcgagagg atattccagt gaactatatg aaggagctgg aactggtcac caaggccggc    1260
ttccgggccc ttctctctgc cccctggtac ctgaaccgta tatcctatgg ccctgactgg    1320
aaggatttct acatagtgga acccctggca tttgaaggta cccctgagca gaaggctctg    1380
gtgattggtg gagaggcttg tatgtgggga gaatatgtgg acaacacaaa cctggtcccc    1440
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aggctctggc ccagagcagg ggctgttgcc gaaaggctgt ggagcaacaa gttgacatct 1500
gacctgacat ttgcctatga acgtttgtca cacttccgct gtgaattgct gaggcgaggt 1560
gtccaggccc aacccctcaa tgtaggcttc tgtgagcagg agtttgaaca gacctgagcc 1620
ccaggcaccg aggagggtgc tggctgtagg tgaatggtag tggagccagg cttccactgc 1680
atcctggcca ggggacggag ccccttgcct tcgtgcccct tgcctgcgtg cccctgtgct 1740
tggagagaaa ggggccggtg ctggcgctcg cattcaataa agagtaatgt ggcatttttc 1800
tataataaac atggattacc tgtgtttaaa aaaaaaagtg tgaatggcgt tagggtaagg 1860
gcacagccag gctggagtca gtgtctgccc ctgaggtctt ttaagttgag ggctgggaat 1920
gaaacctata gcctttgtgc tgttctgcct tgcctgtgag ctatgtcact cccctcccac 1980
tcctgaccat attccagaca cctgccctaa tcctcagcct gctcacttca cttctgcatt 2040
atatctccaa ggcgttggta tatggaaaaa gatgtagggg cttggaggtg ttctggacag 2100
tggggagggc tccagaccca acctggtcac agaagagcct ctcccccatg catactcatc 2160
cacctccctc ccctagagct attctccttt gggtttcttg ctgcttcaat tttatacaac 2220
cattatttaa atattattaa acacatattg ttctct 2256

<210> 3
<211> 544
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 3
Met Leu Leu Ala Leu Leu Leu Ala Thr Leu Leu Ala Ala Met Leu Ala
1 5 10 15
Leu Leu Thr Gln Val Ala Leu Val Val Gln Val Ala Glu Ala Ala Arg
20 25 30
Ala Pro Ser Val Ser Ala Lys Pro Gly Pro Ala Leu Trp Pro Leu Pro
35 40 45
Leu Leu Val Lys Met Thr Pro Asn Leu Leu His Leu Ala Pro Glu Asn
50 55 60
Phe Tyr Ile Ser His Ser Pro Asn Ser Thr Ala Gly Pro Ser Cys Thr
65 70 75 80
Leu Leu Glu Glu Ala Phe Arg Arg Tyr His Gly Tyr Ile Phe Gly Phe
85 90 95
Tyr Lys Trp His His Glu Pro Ala Glu Phe Gln Ala Lys Thr Gln Val
100 105 110
Gln Gln Leu Leu Val Ser Ile Thr Leu Gln Ser Glu Cys Asp Ala Phe
115 120 125
Pro Asn Ile Ser Ser Asp Glu Ser Tyr Thr Leu Leu Val Lys Glu Pro
130 135 140
Val Ala Val Leu Lys Ala Asn Arg Val Trp Gly Ala Leu Arg Gly Leu
145 150 155 160
Glu Thr Phe Ser Gln Leu Val Tyr Gln Asp Ser Tyr Gly Thr Phe Thr
165 170 175
Ile Asn Glu Ser Thr Ile Ile Asp Ser Pro Arg Phe Ser His Arg Gly
180 185 190
Ile Leu Ile Asp Thr Ser Arg His Tyr Leu Pro Val Lys Ile Ile Leu
195 200 205
Lys Thr Leu Asp Ala Met Ala Phe Asn Lys Phe Asn Val Leu His Trp
210 215 220
His Ile Val Asp Asp Gln Ser Phe Pro Tyr Gln Ser Ile Thr Phe Pro
225 230 235 240
Glu Leu Ser Asn Lys Gly Ser Tyr Ser Leu Ser His Val Tyr Thr Pro
245 250 255
Asn Asp Val Arg Met Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg
260 265 270
Val Leu Pro Glu Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Lys
275 280 285

```
Gly Gln Lys Asp Leu Leu Thr Pro Cys Tyr Ser Arg Gln Asn Lys Leu
    290                 295                 300
Asp Ser Phe Gly Pro Ile Asn Pro Thr Leu Asn Thr Thr Tyr Ser Phe
305                 310                 315                 320
Leu Thr Thr Phe Phe Lys Glu Ile Ser Glu Val Phe Pro Asp Gln Phe
                325                 330                 335
Ile His Leu Gly Gly Asp Glu Val Glu Phe Lys Cys Trp Glu Ser Asn
            340                 345                 350
Pro Lys Ile Gln Asp Phe Met Arg Gln Lys Gly Phe Gly Thr Asp Phe
        355                 360                 365
Lys Lys Leu Glu Ser Phe Tyr Ile Gln Lys Val Leu Asp Ile Ile Ala
    370                 375                 380
Thr Ile Asn Lys Gly Ser Ile Val Trp Gln Glu Val Phe Asp Asp Lys
385                 390                 395                 400
Ala Lys Leu Ala Pro Gly Thr Ile Val Glu Val Trp Lys Asp Ser Ala
                405                 410                 415
Tyr Pro Glu Glu Leu Ser Arg Val Thr Ala Ser Gly Phe Pro Val Ile
            420                 425                 430
Leu Ser Ala Pro Trp Tyr Leu Asp Leu Ile Ser Tyr Gly Gln Asp Trp
        435                 440                 445
Arg Lys Tyr Tyr Lys Val Glu Pro Leu Asp Phe Gly Gly Thr Gln Lys
    450                 455                 460
Gln Lys Gln Leu Phe Ile Gly Gly Glu Ala Cys Leu Trp Gly Glu Tyr
465                 470                 475                 480
Val Asp Ala Thr Asn Leu Thr Pro Arg Leu Trp Pro Arg Ala Ser Ala
                485                 490                 495
Val Gly Glu Arg Leu Trp Ser Ser Lys Asp Val Arg Asp Met Asp Asp
            500                 505                 510
Ala Tyr Asp Arg Leu Thr Arg His Arg Cys Arg Met Val Glu Arg Gly
        515                 520                 525
Ile Ala Ala Gln Pro Leu Tyr Ala Gly Tyr Cys Asn His Glu Asn Met
    530                 535                 540
```

<210> 4
<211> 1635
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 4

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atgctgctgg cgctgctgtt ggcgacactg ctggcggcga tgttggcgct gctgactcag      60
gtggcgctgg tggtgcaggt ggcggaggcg gctcgggccc cgagcgtctc ggccaagccg     120
gggccggcgc tgtggcccct gccgctcttg gtgaagatga ccccgaacct gctgcatctc     180
gccccggaga acttctacat cagccacagc cccaattcca cggcgggccc ctcctgcacc     240
ctgctggagg aagcgtttcg acgatatcat ggctatattt ttggtttcta caagtggcat     300
catgaacctg ctgaattcca ggctaaaacc caggttcagc aacttcttgt ctcaatcacc     360
cttcagtcag agtgtgatgc tttccccaac atatcttcag atgagtctta tactttactt     420
gtgaaagaac cagtggctgt ccttaaggcc aacagagttt ggggagcatt acgaggttta     480
gagaccttta gccagttagt ttatcaagat tcttatggaa ctttcaccat caatgaatcc     540
accattattg attctccaag gttttctcac agaggaattt tgattgatac atccagacat     600
tatctgccag ttaagattat tcttaaaact ctggatgcca tggcttttaa taagtttaat     660
gttcttcact ggcacatagt tgatgaccag tctttcccat atcagagcat cacttttcct     720
gagttaagca ataaaggaag ctattctttg tctcatgttt atacaccaaa tgatgtccgt     780
atggtgattg aatatgccag attacgagga attcgagtcc tgccagaatt tgatacccct     840
gggcatacac tatcttgggg aaaaggtcag aaagacctcc tgactccatg ttacagtaga     900
caaaacaagt tggactcttt tggacctata aaccctactc tgaatacaac atacagcttc     960
cttactacat ttttcaaaga aattagtgag gtgtttccag atcaattcat tcatttggga    1020
ggagatgaag tggaatttaa atgttgggaa tcaaatccaa aaattcaaga tttcatgagg    1080
```

caaaaaggct ttggcacaga ttttaagaaa ctagaatctt tctacattca aaaggttttg 1140
gatattattg caaccataaa caagggatcc attgtctggc aggaggtttt tgatgataaa 1200
gcaaagcttg cgccgggcac aatagttgaa gtatggaaag acagcgcata tcctgaggaa 1260
ctcagtagag tcacagcatc tggcttccct gtaatccttt ctgctccttg gtacttagat 1320
ttgattagct atggacaaga ttggaggaaa tactataaag tggaacctct tgattttggc 1380
ggtactcaga aacagaaaca acttttcatt ggtggagaag cttgtctatg gggagaatat 1440
gtggatgcaa ctaacctcac tccaagatta tggcctcggg caagtgctgt tggtgagaga 1500
ctctggagtt ccaaagatgt cagagatatg gatgacgcct atgacagact gacaaggcac 1560
cgctgcagga tggtcgaacg tggaatagct gcacaacctc tttatgctgg atattgtaac 1620
catgagaaca tgtaa 1635

<210> 5
<211> 581
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 5
aattccgccc ctctccctcc ccccccccta acgttactgg ccgaagccgc ttggaataag 60
gccggtgtgc gtttgtctat atgtgatttt ccaccatatt gccgtctttt ggcaatgtga 120
gggcccggaa acctggccct gtcttcttga cgagcattcc taggggtctt tcccctctcg 180
ccaaaggaat gcaaggtctg ttgaatgtcg tgaaggaagc agttcctctg gaagcttctt 240
gaagacaaac aacgtctgta gcgacccttt gcaggcagcg gaaccccca cctggcgaca 300
ggtgcctctg cggccaaaag ccacgtgtat aagatacacc tgcaaaggcg gcacaacccc 360
agtgccacgt tgtgagttgg atagttgtgg aaagagtcaa atggctctcc tcaagcgtat 420
tcaacaaggg gctgaaggat gcccagaagg taccccattg tatgggatct gatctggggc 480
ctcggtgcac atgctttaca tgtgtttagt cgaggttaaa aaaacgtcta ggccccccga 540
accacgggga cgtggttttc ctttgaaaaa cacgatgata a 581

<210> 6
<211> 528
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 6
Met Ala Gly Cys Arg Leu Trp Val Ser Leu Leu Leu Ala Ala Ala Leu
1 5 10 15
Ala Cys Leu Ala Thr Ala Leu Trp Pro Trp Pro Gln Tyr Ile Gln Thr
20 25 30
Tyr His Arg Arg Tyr Thr Leu Tyr Pro Asn Asn Phe Gln Phe Arg Tyr
35 40 45
His Val Ser Ser Ala Ala Gln Gly Gly Cys Val Val Leu Asp Glu Ala
50 55 60
Phe Arg Arg Tyr Arg Asn Leu Leu Phe Gly Ser Gly Ser Trp Pro Arg
65 70 75 80

Pro Ser Phe Ser Asn Lys Gln Gln Thr Leu Gly Lys Asn Ile Leu Val
85 90 95
Val Ser Val Val Thr Ala Glu Cys Asn Glu Phe Pro Asn Leu Glu Ser
100 105 110
Val Glu Asn Tyr Thr Leu Thr Ile Asn Asp Asp Gln Cys Leu Leu Ala
115 120 125
Ser Glu Thr Val Trp Gly Ala Leu Arg Gly Leu Glu Thr Phe Ser Gln
130 135 140

```
Leu Val Trp Lys Ser Ala Glu Gly Thr Phe Phe Ile Asn Lys Thr Lys
145                 150                 155                 160
Ile Lys Asp Phe Pro Arg Phe Pro His Arg Gly Val Leu Leu Asp Thr
                165                 170                 175
Ser Arg His Tyr Leu Pro Leu Ser Ser Ile Leu Asp Thr Leu Asp Val
            180                 185                 190
Met Ala Tyr Asn Lys Phe Asn Val Phe His Trp His Leu Val Asp Asp
        195                 200                 205
Ser Ser Phe Pro Tyr Glu Ser Phe Thr Phe Pro Glu Leu Thr Arg Lys
    210                 215                 220
Gly Ser Phe Asn Pro Val Thr His Ile Tyr Thr Ala Gln Asp Val Lys
225                 230                 235                 240
Glu Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg Val Leu Ala Glu
                245                 250                 255
Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Pro Gly Ala Pro Gly
            260                 265                 270
Leu Leu Thr Pro Cys Tyr Ser Gly Ser His Leu Ser Gly Thr Phe Gly
        275                 280                 285
Pro Val Asn Pro Ser Leu Asn Ser Thr Tyr Asp Phe Met Ser Thr Leu
    290                 295                 300
Phe Leu Glu Ile Ser Ser Val Phe Pro Asp Phe Tyr Leu His Leu Gly
305                 310                 315                 320
Gly Asp Glu Val Asp Phe Thr Cys Trp Lys Ser Asn Pro Asn Ile Gln
                325                 330                 335
Ala Phe Met Lys Lys Lys Gly Phe Thr Asp Phe Lys Gln Leu Glu Ser
            340                 345                 350
Phe Tyr Ile Gln Thr Leu Leu Asp Ile Val Ser Asp Tyr Asp Lys Gly
        355                 360                 365
Tyr Val Val Trp Gln Glu Val Phe Asp Asn Lys Val Lys Val Arg Pro
    370                 375                 380
Asp Thr Ile Ile Gln Val Trp Arg Glu Glu Met Pro Val Glu Tyr Met
385                 390                 395                 400
Leu Glu Met Gln Asp Ile Thr Arg Ala Gly Phe Arg Ala Leu Leu Ser
                405                 410                 415
Ala Pro Trp Tyr Leu Asn Arg Val Lys Tyr Gly Pro Asp Trp Lys Asp
            420                 425                 430
Met Tyr Lys Val Glu Pro Leu Ala Phe His Gly Thr Pro Glu Gln Lys
        435                 440                 445
Ala Leu Val Ile Gly Gly Glu Ala Cys Met Trp Gly Glu Tyr Val Asp
    450                 455                 460
Ser Thr Asn Leu Val Pro Arg Leu Trp Pro Arg Ala Gly Ala Val Ala
465                 470                 475                 480
Glu Arg Leu Trp Ser Ser Asn Leu Thr Thr Asn Ile Asp Phe Ala Phe
                485                 490                 495
Lys Arg Leu Ser His Phe Arg Cys Glu Leu Val Arg Arg Gly Ile Gln
            500                 505                 510
Ala Gln Pro Ile Ser Val Gly Tyr Cys Glu Gln Glu Phe Glu Gln Thr
        515                 520                 525
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<210> 7
<211> 1960
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 7
ctgcagaatc ctttgcttac ggatctctga gatcgagccg ccttgcttcc ctcccgttca 60
cgtgaccctc cgattgtcac gcgggcgtcc gctcagctga ccggggctca cgtgggctca 120

gcctgctggc cggggagctg gccggtgggc atggccggct gcaggctctg ggtttcgctg 180
ctgctggcgg cggcgttggc ttgcttggcc acggcactgt ggccgtggcc ccagtacatc 240
caaacctacc accggcgcta caccctgtac cccaacaact tccagttccg gtaccatgtc 300
agttcggccg cgcagggcgg ctgcgtcgtc ctcgacgagg cctttcgacg ctaccgtaac 360
ctgctcttcg gttccggctc ttggccccga cccagcttct caaataaaca gcaaacgttg 420
gggaagaaca ttctggtggt ctccgtcgtc acagctgaat gtaatgaatt tcctaatttg 480
gagtcggtag aaaattacac cctaaccatt aatgatgacc agtgtttact cgcctctgag 540
actgtctggg gcgctctccg aggtctggag actttcagtc agcttgtttg gaaatcagct 600
gagggcacgt tctttatcaa caagacaaag attaaagact ttcctcgatt ccctcaccgg 660

ggcgtactgc tggatacatc tcgccattac ctgccattgt ctagcatcct ggatacactg 720
gatgtcatgg catacaataa attcaacgtg ttccactggc acttggtgga cgactcttcc 780
ttcccatatg agagcttcac tttcccagag ctcaccagaa aggggtcctt caaccctgtc 840
actcacatct acacagcaca ggatgtgaag gaggtcattg aatacgcaag gcttcggggt 900
atccgtgtgc tggcagaatt tgacactcct ggccacactt tgtcctgggg gccaggtgcc 960
cctgggttat taacaccttg ctactctggg tctcatctct ctggcacatt tggaccggtg 1020
aaccccagtc tcaacagcac ctatgacttc atgagcacac tcttcctgga gatcagctca 1080
gtcttcccgg acttttatct ccacctggga ggggatgaag tcgacttcac ctgctggaag 1140
tccaacccca acatccaggc cttcatgaag aaaaagggct ttactgactt caagcagctg 1200
gagtccttct acatccagac gctgctggac atcgtctctg attatgacaa gggctatgtg 1260
gtgtggcagg aggtatttga taataaagtg aaggttcggc cagatacaat catacaggtg 1320
tggcgggaag aaatgccagt agagtacatg ttggagatgc aagatatcac cagggctggc 1380
ttccgggccc tgctgtctgc tccctggtac ctgaaccgtg taaagtatgg ccctgactgg 1440
aaggacatgt acaaagtgga gcccctggca tttcatggta cgcctgaaca gaaggctctg 1500
gtcattggag gggaggcctg tatgtgggga gagtatgtgg acagcaccaa cctggtcccc 1560
agactctggc ccagagcggg tgccgtcgct gagagactgt ggagcagtaa cctgacaact 1620
aatatagact ttgcctttaa acgtttgtcg catttccgtt gtgagctggt gaggagagga 1680
atccaggccc agcccatcag tgtaggctac tgtgagcagg agtttgagca gacttgagcc 1740
accagcgctg aacacccagg aggttgctgt cctttgagtc agctgcgctg agcacccagg 1800
agggtgctgg ccttaagaga gcaggtcccg gggcagggct aatctttcac tgcctcccgg 1860
ccaggggaga gcacccctg cccgtgtgcc cctgtgacta cagagaagga ggctggtgct 1920
ggcactggtg ttcaataaag atctatgtgg cattttctct 1960

<210> 8
<211> 12745
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 8
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agtctccacc ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt 120
ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg gcggtaggcg tgtacggtgg 180
gaggtctata taagcagagc tctgtgaaac ttcgaggagt ctctttgttg aggacttttg 240
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tctgtgtaat ctttttttacc tgtgaggtct cggaatccgg gccgagaact tcgcagttgg 360
cgcccgaaca gggacttgat tgagagtgat tgaggaagtg aagctagagc aatagaaagc 420
tgttaagcag aactcctgct gacctaaata gggaagcagt agcagacgct gctaacagtg 480
agtatctcta gtgaagcgga ctcgagctca taatcaagtc attgtttaaa ggcccagata 540
aattacatct ggtgactctt cgcggacctt caagccagga gattcgccga gggacagtca 600
acaaggtagg agagattcta cagcaacatg gggaatggac aggggcgaga ttggaaaatg 660
gccattaaga gatgtagtaa tgttgctgta ggagtagggg ggaagagtaa aaaatttgga 720
gaagggaatt tcagatgggc cattagaatg gctaatgtat ctacaggacg agaacctggt 780
gatataccag agactttaga tcaactaagg ttggttattt gcgatttaca agaaagaaga 840
gaaaaatttg gatctagcaa agaaattgat atggcaattg tgacattaaa agtctttgcg 900
gtagcaggac ttttaaatat gacgggtgtc tactgctgct gcagctgaaa atatgtattc 960
tcaaatggga ttagacacta ggccatctat gaaagaagca ggtggaaaag aggaaggccc 1020
tccacaggca tatcctattc aaacagtaaa tggagtacca caatatgtag cacttgaccc 1080

aaaaatggtg tccattttta tggaaaaggc aagagaagga ctaggaggtg aggaagttca 1140
actatggttt actgccttct ctgcaaattt aacacctact gacatggcca cattaataat 1200
ggccgcacca gggtgcgctg cagataaaga aatattggat gaaagcttaa agcaactgac 1260
agcagaatat gatcgcacac atccccctga tgctcccaga ccattaccct attttactgc 1320
agcagaaatt atgggtatag gattaactca agaacaacaa gcagaagcaa gatttgcacc 1380
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<210> 9
<211> 529
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 9

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Ser Asp Gln Arg Tyr Val Leu Tyr Pro Asn Asn Phe Gln Phe Gln Tyr
        35                  40                  45
Asp Val Ser Ser Ala Ala Gln Pro Gly Cys Ser Val Leu Asp Glu Ala
    50                  55                  60
Phe Gln Arg Tyr Arg Asp Leu Leu Phe Gly Ser Gly Ser Trp Pro Arg
65                  70                  75                  80
Pro Tyr Leu Thr Gly Lys Arg His Thr Leu Glu Lys Asn Val Leu Val
                85                  90                  95
Val Ser Val Val Thr Pro Gly Cys Asn Gln Leu Pro Thr Leu Glu Ser
            100                 105                 110
Val Glu Asn Tyr Thr Leu Thr Ile Asn Asp Asp Gln Cys Leu Leu Leu
        115                 120                 125
Ser Glu Thr Val Trp Gly Ala Leu Arg Gly Leu Glu Thr Phe Ser Gln
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Leu Val Trp Lys Ser Ala Glu Gly Thr Phe Phe Ile Asn Lys Thr Glu
145                 150                 155                 160
Ile Glu Asp Phe Pro Arg Phe Pro His Arg Gly Leu Leu Leu Asp Thr
                165                 170                 175
Ser Arg His Tyr Leu Pro Leu Ser Ser Ile Leu Asp Thr Leu Asp Val
            180                 185                 190
Met Ala Tyr Asn Lys Leu Asn Val Phe His Trp His Leu Val Asp Asp
        195                 200                 205
Pro Ser Phe Pro Tyr Glu Ser Phe Thr Phe Pro Glu Leu Met Arg Lys
    210                 215                 220
Gly Ser Tyr Asn Pro Val Thr His Ile Tyr Thr Ala Gln Asp Val Lys
225                 230                 235                 240
Glu Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg Val Leu Ala Glu
                245                 250                 255
Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Pro Gly Ile Pro Gly
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Leu Leu Thr Pro Cys Tyr Ser Gly Ser Glu Pro Ser Gly Thr Phe Gly
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Gly Asp Glu Val Asp Phe Thr Cys Trp Lys Ser Asn Pro Glu Ile Gln
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        355                 360                 365
Gly Tyr Val Val Trp Gln Glu Val Phe Asp Asn Lys Val Lys Ile Gln
    370                 375                 380
Pro Asp Thr Ile Ile Gln Val Trp Arg Glu Asp Ile Pro Val Asn Tyr
385                 390                 395                 400
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                405                 410                 415
Ser Ala Pro Trp Tyr Leu Asn Arg Ile Ser Tyr Gly Pro Asp Trp Lys
            420                 425                 430
Asp Phe Tyr Val Val Glu Pro Leu Ala Phe Glu Gly Thr Pro Glu Gln
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Lys Ala Leu Val Ile Gly Gly Glu Ala Cys Met Trp Gly Glu Tyr Val
    450                 455                 460
Asp Asn Thr Asn Leu Val Pro Arg Leu Trp Pro Arg Ala Gly Ala Val
465                 470                 475                 480
Ala Glu Arg Leu Trp Ser Asn Lys Leu Thr Ser Asp Leu Thr Phe Ala
                485                 490                 495
Tyr Glu Arg Leu Ser His Phe Arg Cys Glu Leu Leu Arg Arg Gly Val
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Gln Ala Gln Pro Leu Asn Val Gly Phe Cys Glu Gln Glu Phe Glu Gln
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<210> 10
<211> 2255
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

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ttttcggttc cgggtcttgg ccccgtcctt acctcacagg gaaacggcat acactggaga     300
agaatgtgtt ggttgtctct gtagtcacac ctggatgtaa ccagcttcct actttggagt     360
cagtggagaa ttataccctg accataaatg atgaccagtg tttactcctc tctgagactg     420
tctggggagc tctccgaggt ctggagactt ttagccagct tgtttggaaa tctgctgagg     480
gcacattctt tatcaacaag actgagattg aggactttcc ccgctttcct caccggggct     540
tgctgttgga tacatctcgc cattacctgc cactctctag catcctggac actctggatg     600
tcatggcgta caataaattg aacgtgttcc actggcatct ggtagatgat ccttccttcc     660
catatgagag cttcactttt ccagagctca tgagaaaggg gtcctacaac cctgtcaccc     720
acatctacac agcacaggat gtgaaggagg tcattgaata cgcacggctc cggggtatcc     780
gtgtgcttgc agagtttgac actcctggcc acactttgtc ctggggacca ggtatccctg     840
gattactgac tccttgctac tctgggtctg agccctctgg cacctttgga ccagtgaatc     900
ccagtctcaa taatacctat gagttcatga gcacattctt cttagaagtc agctctgtct     960
tcccagattt ttatcttcat cttggaggag atgaggttga tttcacctgc tggaagtcca    1020
acccagagat ccaggacttt atgaggaaga aaggcttcgg tgaggacttc aagcagctgg    1080
```

agtccttcta catccagacg ctgctggaca tcgtctcttc ttatggcaag ggctatgtgg 1140
tgtggcagga ggtgtttgat aataaagtaa agattcagcc agacacaatc atacaggtgt 1200
ggcgagagga tattccagtg aactatatga aggagctgga actggtcacc aaggccggct 1260
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ggctctggcc cagagcaggg gctgttgccg aaaggctgtg gagcaacaag ttgacatctg 1500
acctgacatt tgcctatgaa cgtttgtcac acttccgctg tgagttgctg aggcgaggtg 1560
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caggcaccga ggagggtgct ggctgtaggt gaatggtagt ggagccaggc ttccactgca 1680
tcctggccag gggacggagc cccttgcctt cgtgcccctt gcctgcgtgc ccctgtgctt 1740
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ataataaaca tggattacct gtgtttaaaa aaaaaagtgt gaatggcgtt agggtaaggg 1860
cacagccagg ctggagtcag tgtctgcccc tgaggtcttt taagttgagg gctgggaatg 1920
aaacctatag cctttgtgct gttctgcctt gcctgtgagc tatgtcactc ccctcccact 1980
cctgaccata ttccagacac ctgccctaat cctcagcctg ctcacttcac ttctgcatta 2040
tatctccaag gcgttggtat atggaaaaag atgtaggggc ttggaggtgt tctggacagt 2100
ggggagggct ccagacccaa cctggtcaca aaagagcctc tcccccatgc atactcatcc 2160
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attatttaaa tattattaaa cacatattgt tctct 2255

<210> 11
<211> 1635
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 11
atgctactgg cgctgctgtt ggcgacactg ctggcggcga tgttggcgct gctgactcag 60
gtggcgctgg tggtgcaggt ggcggaggcg gctcgggccc cgagcgtctc ggccaagccg 120
gggccggcgc tgtggcccct gccgctcttg gtgaagatga ccccgaacct gctgcatctc 180
gccccggaga acttctacat cagccacagc cccaattcca cggcgggccc ctcctgcacc 240
ctgctggagg aagcgtttcg acgatatcat ggctatattt ttggtttcta caagtggcat 300
catgaacctg ctgaattcca ggctaaaacc caggttcagc aacttcttgt ctcaatcacc 360
cttcagtcag agtgtgatgc tttccccaac atatcttcag atgagtctta tactttactt 420
gtgaaagaac cagtggctgt ccttaaggcc aacagagttt ggggagcatt acgaggttta 480
gagaccttta gccagttagt ttatcaagat tcttatggaa ctttcaccat caatgaatcc 540
accattattg attctccaag gttttctcac agaggaattt tgattgatac atccagacat 600
tatctgccag ttaagattat tcttaaaact ctggatgcca tggcttttaa taagtttaat 660
gttcttcact ggcacatagt tgatgaccag tctttcccat atcagagcat cacttttcct 720
gagttaagca ataaaggaag ctattctttg tctcatgttt atacaccaaa tgatgtccgt 780
atggtgattg aatatgccag attacgagga attcgagtcc tgccagaatt tgataccct 840
gggcatacac tatcttgggg aaaaggtcag aaagacctcc tgactccatg ttacagtaga 900
caaaacaagt tggactcttt tggacctata aaccctactc tgaatacaac atacagcttc 960
cttactacat ttttcaaaga aattagtgag gtgtttccag atcaattcat tcatttggga 1020
ggagatgaag tggaatttaa atgttgggaa tcaaatccaa aaattcaaga tttcatgagg 1080
caaaaaggct ttggcacaga ttttaagaaa ctagaatctt tctacattca aaaggttttg 1140
gatattattg caaccataaa caagggatcc attgtctggc aggaggtttt tgatgataaa 1200
gcaaagcttg cgccgggcac aatagttgaa gtatggaaag acagcgcata tcctgaggaa 1260
ctcagtagag tcacagcatc tggcttccct gtaatccttt ctgctccttg gtacttagat 1320
ttgattagct atggacaaga ttggaggaaa tactataaag tggaacctct tgattttggc 1380
ggtactcaga aacagaaaca acttttcatt ggtggagaag cttgtctatg gggagaatat 1440
gtggatgcaa ctaacctcac tccaagatta tggcctcggg caagtgctgt tggtgagaga 1500
ctctggagtt ccaaagatgt cagagatatg gatgacgcct atgacagact gacaaggcac 1560
cgctgcagga tggtcgaacg tggaatagct gcacaacctc tttatgctgg atattgtaac 1620
catgagaaca tgtaa 1635

<210> 12
<211> 544
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 12

```
Met Leu Leu Ala Leu Leu Leu Ala Thr Leu Leu Ala Ala Met Leu Ala
 1               5                  10                  15
Leu Leu Thr Gln Ile Ala Leu Val Val Gln Val Ala Glu Ala Ala Arg
            20                  25                  30
Ala Pro Ser Val Ser Ala Lys Pro Gly Pro Ala Leu Trp Pro Leu Pro
        35                  40                  45
Leu Leu Val Lys Met Thr Pro Asn Leu Leu His Leu Ala Pro Glu Asn
    50                  55                  60
Phe Tyr Ile Ser His Ser Pro Asn Ser Thr Ala Gly Pro Ser Cys Thr
65                  70                  75                  80
Leu Leu Glu Glu Ala Phe Arg Arg Tyr His Gly Tyr Ile Phe Gly Phe
                85                  90                  95
Tyr Lys Trp His His Glu Pro Ala Glu Phe Gln Ala Lys Thr Gln Val
            100                 105                 110
Gln Gln Leu Leu Val Ser Ile Thr Leu Gln Ser Glu Cys Asp Ala Phe
        115                 120                 125
Pro Asn Ile Ser Ser Asp Glu Ser Tyr Thr Leu Leu Val Lys Glu Pro
    130                 135                 140
Val Ala Val Leu Lys Ala Asn Arg Val Trp Gly Ala Leu Arg Gly Leu
145                 150                 155                 160
Glu Thr Phe Ser Gln Leu Val Tyr Gln Asp Ser Tyr Gly Thr Phe Thr
                165                 170                 175
Ile Asn Glu Ser Thr Ile Ile Asp Ser Pro Arg Phe Ser His Arg Gly
            180                 185                 190
Ile Leu Ile Asp Thr Ser Arg His Tyr Leu Pro Val Lys Ile Ile Leu
        195                 200                 205
Lys Thr Leu Asp Ala Met Ala Phe Asn Lys Phe Asn Val Leu His Trp
    210                 215                 220
His Ile Val Asp Asp Gln Ser Phe Pro Tyr Gln Ser Ile Thr Phe Pro
225                 230                 235                 240
Glu Leu Ser Asn Lys Gly Ser Tyr Ser Leu Ser His Val Tyr Thr Pro
                245                 250                 255
Asn Asp Val Arg Met Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg
            260                 265                 270
Val Leu Pro Glu Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Lys
        275                 280                 285
Gly Gln Lys Asp Leu Leu Thr Pro Cys Tyr Ser Arg Gln Asn Lys Leu
    290                 295                 300
Asp Ser Phe Gly Pro Ile Asn Pro Thr Leu Asn Thr Thr Tyr Ser Phe
305                 310                 315                 320
Leu Thr Thr Phe Phe Lys Glu Ile Ser Glu Val Phe Pro Asp Gln Phe
                325                 330                 335
Ile His Leu Gly Gly Asp Glu Val Glu Phe Lys Cys Trp Glu Ser Asn
            340                 345                 350
Pro Lys Ile Gln Asp Phe Met Arg Gln Lys Gly Phe Gly Thr Asp Phe
        355                 360                 365
Lys Lys Leu Glu Ser Phe Tyr Ile Gln Lys Val Leu Asp Ile Ile Ala
    370                 375                 380
Thr Ile Asn Lys Gly Ser Ile Val Trp Gln Glu Val Phe Asp Asp Lys
385                 390                 395                 400
```

```
Ala Lys Leu Ala Pro Gly Thr Ile Val Glu Val Trp Lys Asp Ser Ala
                405                 410                 415
Tyr Pro Glu Glu Leu Ser Arg Val Thr Ala Ser Gly Phe Pro Val Ile
            420                 425                 430
Leu Ser Ala Pro Trp Tyr Leu Asp Leu Ile Ser Tyr Gly Gln Asp Trp
        435                 440                 445
Arg Lys Tyr Tyr Lys Val Glu Pro Leu Asp Phe Gly Gly Thr Gln Lys
    450                 455                 460
Gln Lys Gln Leu Phe Ile Gly Gly Glu Ala Cys Leu Trp Gly Glu Tyr
465                 470                 475                 480
Val Asp Ala Thr Asn Leu Thr Pro Arg Leu Trp Pro Arg Ala Ser Ala
                485                 490                 495
Val Gly Glu Arg Leu Trp Ser Ser Lys Asp Val Arg Asp Met Asp Asp
            500                 505                 510
Ala Tyr Asp Arg Leu Thr Arg His Arg Cys Arg Met Val Glu Arg Gly
        515                 520                 525
Ile Ala Ala Gln Pro Leu Tyr Ala Gly Tyr Cys Asn His Glu Asn Met
    530                 535                 540
```

<210> 13
<211> 529
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 13

```
Met Thr Ser Ser Arg Leu Trp Phe Ser Leu Leu Leu Ala Ala Ala Phe
 1                5                  10                  15
Ala Gly Arg Ala Thr Ala Leu Trp Pro Trp Pro Gln Asn Phe Gln Thr
            20                  25                  30
Ser Asp Gln Arg Tyr Val Leu Tyr Pro Asn Asn Phe Gln Phe Gln Tyr
        35                  40                  45
Asp Val Ser Ser Ala Ala Gln Pro Gly Cys Ser Val Leu Asp Glu Ala
    50                  55                  60
Phe Gln Arg Tyr Arg Asp Leu Leu Phe Gly Ser Gly Ser Trp Pro Arg
65                  70                  75                  80
Pro Tyr Leu Thr Gly Lys Arg His Thr Leu Glu Lys Asn Val Leu Val
                85                  90                  95
Val Ser Val Val Thr Pro Gly Cys Asn Gln Leu Pro Thr Leu Glu Ser
            100                 105                 110
Val Glu Asn Tyr Thr Leu Thr Ile Asn Asp Asp Gln Cys Leu Leu Leu
        115                 120                 125
Ser Glu Thr Val Trp Gly Ala Leu Arg Gly Leu Glu Thr Phe Ser Gln
    130                 135                 140
Leu Val Trp Lys Ser Ala Glu Gly Thr Phe Phe Ile Asn Lys Thr Glu
145                 150                 155                 160
Ile Glu Asp Phe Pro Arg Phe Pro His Arg Gly Leu Leu Leu Asp Thr
                165                 170                 175
Ser Arg His Tyr Leu Pro Leu Ser Ser Ile Leu Asp Thr Leu Asp Val
            180                 185                 190
Met Ala Tyr Asn Lys Leu Asn Val Phe His Trp His Leu Val Asp Asp
        195                 200                 205
Pro Ser Phe Pro Tyr Glu Ser Phe Thr Phe Pro Glu Leu Met Arg Lys
    210                 215                 220
Gly Ser Tyr Asn Pro Val Thr His Ile Tyr Thr Ala Gln Asp Val Lys
225                 230                 235                 240
Glu Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg Val Leu Ala Glu
                245                 250                 255
```

```
Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Pro Gly Ile Pro Gly
            260                 265                 270
Leu Leu Thr Pro Cys Tyr Ser Gly Ser Glu Pro Ser Gly Thr Phe Gly
        275                 280                 285
Pro Val Asn Pro Ser Leu Asn Asn Thr Tyr Glu Phe Met Ser Thr Phe
    290                 295                 300
Phe Leu Glu Val Ser Ser Val Phe Pro Asp Phe Tyr Leu His Leu Gly
305                 310                 315                 320
Gly Asp Glu Val Asp Phe Thr Cys Trp Lys Ser Asn Pro Glu Ile Gln
                325                 330                 335
Asp Phe Met Arg Lys Lys Gly Phe Gly Glu Asp Phe Lys Gln Leu Glu
            340                 345                 350
Ser Phe Tyr Ile Gln Thr Leu Leu Asp Ile Val Ser Ser Tyr Gly Lys
        355                 360                 365
Gly Tyr Val Val Trp Gln Glu Val Phe Asp Asn Lys Val Lys Ile Gln
    370                 375                 380
Pro Asp Thr Ile Ile Gln Val Trp Arg Glu Asp Ile Pro Val Asn Tyr
385                 390                 395                 400
Met Lys Glu Leu Glu Leu Val Thr Lys Ala Gly Phe Arg Ala Leu Leu
                405                 410                 415
Ser Ala Pro Trp Tyr Leu Asn Arg Ile Ser Tyr Gly Pro Asp Trp Lys
            420                 425                 430
Asp Phe Tyr Val Val Glu Pro Leu Ala Phe Glu Gly Thr Pro Glu Gln
        435                 440                 445
Lys Ala Leu Val Ile Gly Gly Glu Ala Cys Met Trp Gly Glu Tyr Val
    450                 455                 460
Asp Asn Thr Asn Leu Val Pro Arg Leu Trp Pro Arg Ala Gly Ala Val
465                 470                 475                 480
Ala Glu Arg Leu Trp Ser Asn Lys Leu Thr Ser Asp Leu Thr Phe Ala
                485                 490                 495
Tyr Glu Arg Leu Ser His Phe Arg Cys Glu Leu Leu Arg Arg Gly Val
            500                 505                 510
Gln Ala Gln Pro Leu Asn Val Gly Phe Cys Glu Gln Glu Phe Glu Gln
        515                 520                 525
Thr
```

<210> 14
<211> 739
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 14

```
ttttaatcct ccgtttttct gcttctgaag ttacttcagc ctggcaagtc ctttacctcc      60
ccgtaggcct ggcgagctgc atcacaacat tcaagattca ccctagagcc atctgggaaa     120
ctttcttctc caggtcgccc tgcgtcctcg cctccccacc ccgttcttct cgagtcgggt     180
gagctgtcta gttccatcac ggccggcacg gccgcagggg tggccggtta tttactgctc     240
tactgggccc gtgagcagtc tggcgagccg agcagttgcc gacgcccggc acaatccgct     300
gcacgtagca ggagcctcag gtccaggccg gaagtgaaag ggcagggtgt gggtcctcct     360
ggggtcgcag gcgcagagcc gcctctggtc acgtgattcg ccgataagtc acgggggcgc     420
cgctcacctg accagggtct cacgtggcca gccccctccg agaggggaga ccagcgggcc     480
atgacaagct ccaggctttg gttttcgctg ctgctggcgg cagcgttcgc aggacgggcg     540
acggccctct ggccctggcc tcagaacttc caaacctccg accagcgcta cgtcctttac     600
ccgaacaact ttcaattcca gtacgatgtc agctcggccg cgcagcccgg ctgctcagtc     660
ctcgacgagg ccttccagcg ctatcgtgac ctgcttttcg gttccgggtc ttggccccgt     720
ccttacctca caggtgagt                                                 739
```

<210> 15
<211> 556
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 15

```
Met Glu Leu Cys Gly Leu Gly Leu Pro Arg Pro Pro Met Leu Leu Ala
 1               5                  10                  15
Leu Leu Leu Ala Thr Leu Leu Ala Ala Met Leu Ala Leu Leu Thr Gln
            20                  25                  30
Val Ala Leu Val Val Gln Val Ala Glu Ala Ala Arg Ala Pro Ser Val
        35                  40                  45
Ser Ala Lys Pro Gly Pro Ala Leu Trp Pro Leu Pro Leu Ser Val Lys
    50                  55                  60
Met Thr Pro Asn Leu Leu His Leu Ala Pro Glu Asn Phe Tyr Ile Ser
65                  70                  75                  80
His Ser Pro Asn Ser Thr Ala Gly Pro Ser Cys Thr Leu Leu Glu Glu
                85                  90                  95
Ala Phe Arg Arg Tyr His Gly Tyr Ile Phe Gly Phe Tyr Lys Trp His
            100                 105                 110
His Glu Pro Ala Glu Phe Gln Ala Lys Thr Gln Val Gln Gln Leu Leu
        115                 120                 125
Val Ser Ile Thr Leu Gln Ser Glu Cys Asp Ala Phe Pro Asn Ile Ser
    130                 135                 140
Ser Asp Glu Ser Tyr Thr Leu Leu Val Lys Glu Pro Val Ala Val Leu
145                 150                 155                 160
Lys Ala Asn Arg Val Trp Gly Ala Leu Arg Gly Leu Glu Thr Phe Ser
                165                 170                 175
Gln Leu Val Tyr Gln Asp Ser Tyr Gly Thr Phe Thr Ile Asn Glu Ser
            180                 185                 190
Thr Ile Ile Asp Ser Pro Arg Phe Ser His Arg Gly Ile Leu Ile Asp
        195                 200                 205
Thr Ser Arg His Tyr Leu Pro Val Lys Ile Ile Leu Lys Thr Leu Asp
    210                 215                 220
Ala Met Ala Phe Asn Lys Phe Asn Val Leu His Trp His Ile Val Asp
225                 230                 235                 240
Asp Gln Ser Phe Pro Tyr Gln Ser Ile Thr Phe Pro Glu Leu Ser Asn
                245                 250                 255
Lys Gly Ser Tyr Ser Leu Ser His Val Tyr Thr Pro Asn Asp Val Arg
            260                 265                 270
Met Val Ile Glu Tyr Ala Arg Leu Arg Gly Ile Arg Val Leu Pro Glu
        275                 280                 285
Phe Asp Thr Pro Gly His Thr Leu Ser Trp Gly Lys Gly Gln Lys Asp
    290                 295                 300
Leu Leu Thr Pro Cys Tyr Ser Arg Gln Asn Lys Leu Asp Ser Phe Gly
305                 310                 315                 320
Pro Ile Asn Pro Thr Leu Asn Thr Thr Tyr Ser Phe Leu Thr Thr Phe
                325                 330                 335
Phe Lys Glu Ile Ser Glu Val Phe Pro Asp Gln Phe Ile His Leu Gly
            340                 345                 350
Gly Asp Glu Val Glu Phe Lys Cys Trp Glu Ser Asn Pro Lys Ile Gln
        355                 360                 365
Asp Phe Met Arg Gln Lys Gly Phe Gly Thr Asp Phe Lys Lys Leu Glu
    370                 375                 380
Ser Phe Tyr Ile Gln Lys Val Leu Asp Ile Ile Ala Thr Ile Asn Lys
385                 390                 395                 400
```

```
Gly Ser Ile Val Trp Gln Glu Val Phe Asp Asp Lys Ala Lys Leu Ala
                405                 410                 415
Pro Gly Thr Ile Val Glu Val Trp Lys Asp Ser Ala Tyr Pro Glu Glu
            420                 425                 430
Leu Ser Arg Val Thr Ala Ser Gly Phe Pro Val Ile Leu Ser Ala Pro
        435                 440                 445
Trp Tyr Leu Asp Leu Ile Ser Tyr Gly Gln Asp Trp Arg Lys Tyr Tyr
    450                 455                 460
Lys Val Glu Pro Leu Asp Phe Gly Gly Thr Gln Lys Gln Lys Gln Leu
465                 470                 475                 480
Phe Ile Gly Gly Glu Ala Cys Leu Trp Gly Glu Tyr Val Asp Ala Thr
                485                 490                 495
Asn Leu Thr Pro Arg Leu Trp Pro Arg Ala Ser Ala Val Gly Glu Arg
            500                 505                 510
Leu Trp Ser Ser Lys Asp Val Arg Asp Met Asp Asp Ala Tyr Asp Arg
        515                 520                 525
Leu Thr Arg His Arg Cys Arg Met Val Glu Arg Gly Ile Ala Ala Gln
    530                 535                 540
Pro Leu Tyr Ala Gly Tyr Cys Asn His Glu Asn Met
545                 550                 555
```

<210> 16
<211> 1857
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 16

```
ctgatccggg ccgggcggga agtcgggtcc cgaggctccg gctcggcaga ccgggcggaa      60
agcagccgag cggccatgga gctgtgcggg ctggggctgc cccggccgcc catgctgctg     120
gcgctgctgt tggcgacact gctggcggcg atgttggcgc tgctgactca ggtggcgctg     180
gtggtgcagg tggcggaggc ggctcgggcc ccgagcgtct cggccaagcc ggggccggcg     240
ctgtggcccc tgccgctctc ggtgaagatg accccgaacc tgctgcatct cgccccggag     300
aacttctaca tcagccacag ccccaattcc acggcgggcc cctcctgcac cctgctggag     360
gaagcgtttc gacgatatca tggctatatt tttggtttct acaagtggca tcatgaacct     420
gctgaattcc aggctaaaac ccaggttcag caacttcttg tctcaatcac ccttcagtca     480
gagtgtgatg ctttccccaa catatcttca gatgagtctt atactttact tgtgaaagaa     540
ccagtggctg tccttaaggc caacagagtt tggggagcat tacgaggttt agagaccttt     600
agccagttag tttatcaaga ttcttatgga actttcacca tcaatgaatc caccattatt     660
gattctccaa ggttttctca cagaggaatt ttgattgata catccagaca ttatctgcca     720
gttaagatta ttcttaaaac tctggatgcc atggctttta ataagtttaa tgttcttcac     780
tggcacatag ttgatgacca gtctttccca tatcagagca tcacttttcc tgagttaagc     840
aataaaggaa gctattcttt gtctcatgtt tatacaccaa atgatgtccg tatggtgatt     900
gaatatgcca gattacgagg aattcgagtc ctgccagaat ttgatacccc tgggcataca     960
ctatcttggg gaaaaggtca gaaagacctc ctgactccat gttacagtag acaaaacaag    1020
ttggactctt ttggacctat aaaccctact ctgaatacaa catacagctt ccttactaca    1080
tttttcaaag aaattagtga ggtgtttcca gatcaattca ttcatttggg aggagatgaa    1140
gtggaattta aatgttggga atcaaatcca aaaattcaag atttcatgag gcaaaaaggc    1200
tttggcacag attttaagaa actagaatct ttctacattc aaaaggtttt ggatattatt    1260
gcaaccataa acaagggatc cattgtctgg caggaggttt ttgatgataa agcaaagctt    1320
gcgccgggca caatagttga agtatggaaa gacagcgcat atcctgagga actcagtaga    1380
gtcacagcat ctggcttccc tgtaatcctt tctgctcctt ggtacttaga tttgattagc    1440
tatggacaag attggaggaa atactataaa gtggaacctc ttgattttgg cggtactcag    1500
aaacagaaac aacttttcat tggtggagaa gcttgtctat ggggagaata tgtggatgca    1560
actaacctca ctccaagatt atggcctcgg gcaagtgctg ttggtgagag actctggagt    1620
tccaaagatg tcagagatat ggatgacgcc tatgacagac tgacaaggca ccgctgcagg    1680
atggtcgaac gtggaatagc tgcacaacct ctttatgctg gatattgtaa ccatgagaac    1740
atgtaaaaaa tggaggggaa aaaggccaca gcaatctgta ctacaatcaa ctttattttg    1800
```

aaatcatgta aaataagata ttagactttt ttgaataaaa tatttttatt gattgaa 1857

<210> 17
<211> 536
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 17

```
Met Pro Gln Ser Pro Arg Ser Ala Pro Gly Leu Leu Leu Leu Gln Ala
 1               5                  10                  15
Leu Val Ser Leu Val Ser Leu Ala Leu Val Ala Pro Ala Arg Leu Gln
            20                  25                  30
Pro Ala Leu Trp Pro Phe Pro Arg Ser Val Gln Met Phe Pro Arg Leu
        35                  40                  45
Leu Tyr Ile Ser Ala Glu Asp Phe Ser Ile Asp His Ser Pro Asn Ser
    50                  55                  60
Thr Ala Gly Pro Ser Cys Ser Leu Leu Gln Glu Ala Phe Arg Arg Tyr
65                  70                  75                  80
Tyr Asn Tyr Val Phe Gly Phe Tyr Lys Arg His His Gly Pro Ala Arg
                85                  90                  95
Phe Arg Ala Glu Pro Gln Leu Gln Lys Leu Leu Val Ser Ile Thr Leu
            100                 105                 110
Glu Ser Glu Cys Glu Ser Phe Pro Ser Leu Ser Ser Asp Glu Thr Tyr
        115                 120                 125
Ser Leu Leu Val Gln Glu Pro Val Ala Val Leu Lys Ala Asn Ser Val
    130                 135                 140
Trp Gly Ala Leu Arg Gly Leu Glu Thr Phe Ser Gln Leu Val Tyr Gln
145                 150                 155                 160
Asp Ser Phe Gly Thr Phe Thr Ile Asn Glu Ser Ser Ile Ala Asp Ser
                165                 170                 175
Pro Arg Phe Pro His Arg Gly Ile Leu Ile Asp Thr Ser Arg His Phe
            180                 185                 190
Leu Pro Val Lys Thr Ile Leu Lys Thr Leu Asp Ala Met Ala Phe Asn
        195                 200                 205
Lys Phe Asn Val Leu His Trp His Ile Val Asp Asp Gln Ser Phe Pro
    210                 215                 220
Tyr Gln Ser Thr Thr Phe Pro Glu Leu Ser Asn Lys Gly Ser Tyr Ser
225                 230                 235                 240
Leu Ser His Val Tyr Thr Pro Asn Asp Val Arg Met Val Leu Glu Tyr
                245                 250                 255
Ala Arg Leu Arg Gly Ile Arg Val Ile Pro Glu Phe Asp Thr Pro Gly
            260                 265                 270
His Thr Gln Ser Trp Gly Lys Gly Gln Lys Asn Leu Leu Thr Pro Cys
        275                 280                 285
Tyr Asn Gln Lys Thr Lys Thr Gln Val Phe Gly Pro Val Asp Pro Thr
    290                 295                 300
Val Asn Thr Thr Tyr Ala Phe Phe Asn Thr Phe Phe Lys Glu Ile Ser
305                 310                 315                 320
Ser Val Phe Pro Asp Gln Phe Ile His Leu Gly Gly Asp Glu Val Glu
                325                 330                 335
Phe Gln Cys Trp Ala Ser Asn Pro Asn Ile Gln Gly Phe Met Lys Arg
            340                 345                 350
Lys Gly Phe Gly Ser Asp Phe Arg Arg Leu Glu Ser Phe Tyr Ile Lys
        355                 360                 365
Lys Ile Leu Glu Ile Ile Ser Ser Leu Lys Lys Asn Ser Ile Val Trp
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Glu Val Trp Lys Ser Glu His Tyr Ser Tyr Glu Leu Lys Gln Val Thr
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Gly Ser Gly Phe Pro Ala Ile Leu Ser Ala Pro Trp Tyr Leu Asp Leu
            420                 425                 430
Ile Ser Tyr Gly Gln Asp Trp Lys Asn Tyr Tyr Lys Val Glu Pro Leu
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Asn Phe Glu Gly Ser Glu Lys Gln Lys Gln Leu Val Ile Gly Gly Glu
    450                 455                 460
Ala Cys Leu Trp Gly Glu Phe Val Asp Ala Thr Asn Leu Thr Pro Arg
465                 470                 475                 480
Leu Trp Pro Arg Ala Ser Ala Val Gly Glu Arg Leu Trp Ser Pro Lys
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Thr Val Thr Asp Leu Glu Asn Ala Tyr Lys Arg Leu Ala Val His Arg
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<211> 1750
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

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<210> 19
<211> 12263
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
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ttgcctttta tggtaatcgt gcgagagggc gcagggactt cctttgtccc aaatctggcg 1020
gagccgaaat ctgggaggcg ccgccgcacc ccctctagcg ggcgcgggcg aagcggtgcg 1080
gcgccggcag gaaggaaatg ggcggggagg gccttcgtgc gtcgccgcgc cgccgtcccc 1140
ttctccatct ccagcctcgg ggctgccgca gggggacggc tgccttcggg ggggacgggg 1200
cagggcgggg ttcggcttct ggcgtgtgac cggcggggtt tatatcttcc cttctctgtt 1260
cctccgcagc cagccatg 1278

<210> 22
<211> 1278
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 22
tcgaggtgag ccccacgttc tgcttcactc tccccatctc ccccccctcc ccacccccaa 60
ttttgtattt atttatttt taattatttt gtgcagcgat gggggcgggg gggggggggg 120
cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgaggcg gagaggtgcg 180
gcggcagcca atcagagcgg cgcgctccga aagtttcctt ttatggcgag gcggcggcgg 240
cggcggccct ataaaaagcg aagcgcgcgg cgggcgggag tcgctgcgtt gccttcgccc 300
cgtgccccgc tccgcgccgc ctcgcgccgc ccgccccggc tctgactgac cgcgttactc 360
ccacaggtga gcgggcggga cggcccttct cctccgggct gtaattagcg cttggtttaa 420
tgacggctcg tttcttttct gtggctgcgt gaaagcctta aagggctccg ggagggccct 480
ttgtgcgggg gggagcggct cgggggggtgc gtgcgtgtgt gtgtgcgtgg ggagcgccgc 540
gtgcggcccg cgctgcccgg cggctgtgag cgctgcgggc gcggcgcggg gctttgtgcg 600
ctccgcgtgt gcgcgagggg agcgcggccg ggggcggtgc cccgcggtgc gggggggctg 660
cgaggggaac aaaggctgcg tgcggggtgt gtgcgtgggg gggtgagcag ggggtgtggg 720
cgcggcggtc gggctgtaac ccccccctgc acccccctcc ccgagttgct gcgcacggcc 780
cggcttcggg tgcggggctc cgtgcggggc gtggcgcggg gctcgccgtg ccgggcgggg 840
ggtggcggca ggtgggggtg ccgggcgggg cggggccgcc tcgggccggg gagggctcgg 900
gggaggggcg cggcggcccc ggagcgccgg cggctgtcga ggcgcggcga gccgcagcca 960
ttgcctttta tggtaatcgt gcgagagggc gcagggactt cctttgtccc aaatctggcg 1020
gagccgaaat ctgggaggcg ccgccgcacc ccctctagcg ggcgcgggcg aagcggtgcg 1080
gcgccggcag gaaggaaatg ggcggggagg gccttcgtgc gtcgccgcgc cgccgtcccc 1140
ttctccatct ccagcctcgg ggctgccgca gggggacggc tgccttcggg ggggacgggg 1200
cagggcgggg ttcggcttct ggcgttgtac cggcggggtt tatatcttcc cttctctgtt 1260
cctccgcagc cagccatg 1278

<210> 23
<211> 1729
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 23
gaattcggta ccctagttat taatagtaat caattacggg gtcattagtt catagcccat 60
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg 120
acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 180
tccattgacg tcaatgggtg gactatttac ggtaaactgc ccacttggca gtacatcaag 240
tgtatcatat gccaagtacg ccccctattg acgtcaatga cggtaaatgg cccgcctggc 300
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 360
tcatcgctat taccatggtc gaggtgagcc ccacgttctg cttcactctc cccatctccc 420
ccccctcccc acccccaatt ttgtatttat ttatttttta attatttttgt gcagcgatgg 480
gggcgggggg gggggggggg cgcgcgccag gcggggcggg gcggggcgag gggcggggcg 540
gggcgaggcg gagaggtgcg gcggcagcca atcagagcgg cgcgctccga aagtttcctt 600
ttatggcgag gcggcggcgg cggcggccct ataaaaagcg aagcgcgcgg cgggcgggag 660
tcgctgcgac gctgccttcg ccccgtgccc cgctccgccg ccgcctcgcg ccgcccgccc 720
cggctctgac tgaccgcgtt actcccacag gtgagcgggc gggacggccc ttctcctccg 780
ggctgtaatt agcgcttggt ttaatgacgg cttgtttctt ttctgtggct gcgtgaaagc 840
cttgaggggc tccgggaggg ccctttgtgc gggggggagc ggctcggggg gtgcgtgcgt 900
gtgtgtgtgc gtggggagcg ccgcgtgcgg cccgcgctgc ccggcggctg tgagcgctgc 960
gggcgcggcg cggggctttg tgcgctccgc agtgtgcgcg aggggagcgc ggccgggggc 1020
ggtgccccgc ggtgcggggg gggctgcgag gggaacaaag gctgcgtgcg gggtgtgtgc 1080
gtgggggggt gagcaggggg tgtgggcgcg gcggtcgggc tgtaacccccc ccctgcaccc 1140
ccctccccga gttgctgagc acggcccggc ttcgggtgcg gggctccgta cggggcgtgg 1200
cgcggggctc gccgtgccgg gcgggggggtg gcggcaggtg ggggtgccgg gcggggcggg 1260
gccgcctcgg gccggggagg gctcggggga ggggcgcggc ggcccccgga gcgccggcgg 1320
ctgtcgaggc gcggcgagcc gcagccattg ccttttatgg taatcgtgcg agagggcgca 1380
gggacttcct ttgtcccaaa tctgtgcgga gccgaaatct gggaggcgcc gccgcacccc 1440
ctctagcggg cgcggggcga agcggtgcgg cgccggcagg aaggaaatgg gcggggaggg 1500
ccttcgtgcg tcgccgcgcc gccgtccccc tctccctctc cagcctcggg gctgtccgcg 1560
gggggacggc tgccttcggg ggggacgggg cagggcgggg ttcggcttct ggcgtgtgac 1620
cggcggctct agagcctctg ctaaccatgt tcatgccttc ttctttttcc tacagctcct 1680
gggcaacgtg ctggttattg tgctgtctca tcattttggc aaagaattc 1729

<210> 24
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 24
tagttattaa tagtaatcaa ttacggggtc attagttcat agcccatata tggagttccg 60
cgttacataa cttacggtaa atggcccgcc tggctgaccg cccaacgacc cccgcccatt 120
gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc attgacgtca 180
atgggtggac tatttacggt aaactgccca cttggcagta catcaagtgt atcatatgcc 240
aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt atgcccagta 300
catgacctta tgggactttc ctacttggca gtacatctac gtattagtca tcgctattac 360
catggt 366

<210> 25
<211> 1295
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =

Synthetic Construct

<400> 25
ccaattttgt atttatttat tttttaatta ttttgtgcag cgatgggggc gggggggggg 60
gggggcgcgg cgccaggcgg ggcggggcgg ggcgaggggc ggggcggggc gaggcggaga 120
ggtgcggcgg cagccaatca gagcggcgcg ctccgaaagt ttccttttat ggcgaggcgg 180
cggcggcggc ggccctataa aaagcgaagc gcgcggcggg cgggagtcgc tgcgacgctg 240
ccttcgcccc gtgccccgct ccgccgccgc ctcgcgccgc ccgccccggc tctgactgac 300
cgcgttactc ccacaggtga gcgggcggga cggcccttct cctccgggct gtaattagcg 360
cttggtttaa tgacggcttg tttcttttct gtggctgcgt gaaagccttg aggggctccg 420
ggagggccct ttgtgcgggg gggagcggct cgggggtgtgc gtgcgtgtgt gtgtgcgtgg 480
ggagcgccgc gtgcggcccg cgctgcccgg cggctgtgag cgctgcgggc gcggcgcggg 540
gctttgtgcg ctccgcagtg tgcgcgaggg gagcgcggcc gggggcggtg ccccgcggtg 600
cgggggggcc tgcgagggga acaaaggctg cgtgcggggt gtgtgcgtgg gggggtgagc 660
agggggtgtg ggcgcggcgg tcgggctgta acccccccct gcacccccct ccccgagttg 720
ctgagcacgg cccggcttcg ggtgcggggc tccgtacggg gcgtggcgcg gggctcgccg 780
tgccgggcgg ggggtggcgg caggtggggg tgccgggcgg ggcggggccg cctcgggccg 840
gggagggctc gggggagggg cgcggcggcc cccggagcgc cggcggctgt cgaggcgcgg 900
cgagccgcag ccattgcctt ttatggtaat cgtgcgagag ggcgcaggga cttcctttgt 960
cccaaatctg tgcggagccg aaatctggga ggcgccgccg cacccccctct agcgggcgcg 1020
gggcgaagcg gtgcggcgcc ggcaggaagg aaatgggcgg ggagggcctt cgtgcgtcgc 1080
cgcgccgccg tcccccttctc cctctccagc ctcggggctg tccgcggggg gacggctgcc 1140
ttcgggggggg acggggcagg gcggggttcg gcttctggcg tgtgaccggc ggctctagag 1200
cctctgctaa ccatgttcat gccttcttct ttttcctaca gctcctgggc aacgtgctgg 1260
ttattgtgct gtctcatcat tttggcaaag aattc 1295

<210> 26
<211> 1278
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 26
tcgaggtgag ccccacgttc tgcttcactc tccccatctc ccccccctcc ccacccccaa 60
ttttgtattt atttatttttt taattatttt gtgcagcgat gggggcgggg gggggggggg 120
cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgaggcg gagaggtgcg 180
gcggcagcca atcagagcgg cgcgctccga aagtttcctt ttatggcgag gcggcggcgg 240
cggcggccct ataaaaagcg aagcgcgcgg cgggcgggag tcgctgcgtt gccttcgccc 300
cgtgccccgc tccgcgccgc ctcgcgccgc ccgccccggc tctgactgac cgcgttactc 360
ccacaggtga gcgggcggga cggcccttct cctccgggct gtaattagcg cttggtttaa 420
tgacggctcg tttcttttct gtggctgcgt gaaagcctta aagggctccg ggagggccct 480
ttgtgcgggg gggagcggct cgggggtgtgc gtgcgtgtgt gtgtgcgtgg ggagcgccgc 540
gtgcggcccg cgctgcccgg cggctgtgag cgctgcgggc gcggcgcggg gctttgtgcg 600
ctccgcgtgt gcgcgagggg agcgcggccg ggggcggtgc gcccgcggtgc cgagggaac 660
aaaggctgcg tgcggggtgt gtgcgtgggg gggtgagcag ggggtgtggg cgcggcggtc 720
gggctgtaac ccccccctgc acccccctcc ccgagttgct gcgcacggcc cggcttcggg 780
tgcggggctc cgtgcggggc gtggcgcggg gctcgccgtg ccgggcgggg ggtggcggca 840
ggtgggggtg ccgggcgggg cggggccgcc tcgggccggg gagggctcgg gggagggcg 900
cggcggcccc ggagcgccgg cggctgtcga ggcgcggcga gccgcagcca ttgccttta 960
tggtaatcgt gcgagagggc gcagggactt cctttgtccc aaatctggcg gagccgaaat 1020
ctgggaggcg ccgccgcacc ccctctagcg ggcgcgggcg aagcggtgcg gcgccggcag 1080
gaaggaaatg ggcggggagg gccttcgtgc gtcgccgcgc cgccgtcccc ttctccatct 1140
ccagcctcgg ggctgccgca gggggacggc tgccttcggg ggggacgggg cagggcgggg 1200
ttcggcttct ggcgttgtac cggcggggtt tatatcttcc cttctctgtt cctccgcagc 1260
cagccatg 1278

<210> 27
<211> 229
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 27
gtattagtca tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga 60
tagcggtttg actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg 120
ttttggcacc aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg 180
caaatgggcg gtaggcgtgt acggtgggag gtctatataa gcagagctc 229

<210> 28
<211> 281
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 28
tggcattatg cccagtacat gaccttatgg gactttccta cttggcagta catctacgta 60
ttagtcatcg ctattaccat ggtgatgcgg ttttggcagt acatcaatgg gcgtggatag 120
cggtttgact cacggggatt tccaagtctc caccccattg acgtcaatgg gagtttgttt 180
tggcaccaaa atcaacggga ctttccaaaa tgtcgtaaca actccgcccc attgacgcaa 240
atgggcggta ggcgtgtacg gtgggaggtc tatataagca g 281

<210> 29
<211> 282
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 29
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 60
tcatcgctat taccatggtg atgcggtttt ggcagtacat caatgggcgt ggatagcggt 120
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc 180
accaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg 240
gcggtaggcg tgtacggtgg gaggtctata taagcagagc tc 282

<210> 30
<211> 512
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 30
ttgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg acccccgccc 60
attgacgtca ataatgacgt atgttcccat agtaacgcca tagggactt tccattgacg 120
tcaatgggtg gactatttac ggtaaactgc ccacttggca gtacatcaag tgtatcatat 180

gccaagtacg ccccctattg acgtcaatga cggtaaatgg cccgcctggc attatgccca 240
gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag tcatcgctat 300
taccatggtg atgcggtttt ggcagtacat caatgggcgt ggatagcggt ttgactcacg 360
gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc accaaaatca 420
acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg gcggtaggcg 480
tgtacggtgg gaggtctata taagcagagc tc 512

<210> 31
<211> 308
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 31
tcggcgaagc ctcgcgcggc cggccaggac gaggagcgcc actaggttga acatccgcac 60
gagccgccgg gccaggtctc ggacgggctc tcgagactcg atctcgtgca tgtcggcggt 120
ccgcggtgag gttatagacc atctgctagg cgggtccggg gagacaggca cattactggc 180
ctcggcgccc agcctaggcg tgtctagagc tcgaccgcgc gtccggagcg ccattcgacc 240
ggcgggtagc gagaagaacg ccggagaccg caggttataa caacgtcatg cataaattaa 300
gaatgggc 308

<210> 32
<211> 1848
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 32
ctgcagtgaa taataaaatg tgtgtttgtc cgaaatacgc gtttgagatt tctgtcccga 60
ctaaattcat gtcgcgcgat agtggtgttt atcgccgata gagatggcga tattggaaaa 120
atcgatattt gaaaatatgg catattgaaa atgtcgccga tgtgagtttc tgtgtaactg 180
atatcgccat ttttccaaaa gttgattttt gggcatacgc gatatctggc gatacgctta 240
tatcgtttac gggggatggc gatagacgcc tttggtgact tgggcgattc tgtgtgtcgc 300
aaatatcgca gtttcgatat aggtgacaga cgatatgagg ctatatcgcc gatagaggcg 360
acatcaagct ggcacatggc caatgcatat cgatctatac attgaatcaa tattggccat 420
tagccatatt attcattggt tatatagcat aaatcaatat tggctattgg ccattgcata 480
cgttgtatcc atatcataat atgtacattt atattggctc atgtccaaca ttaccgccat 540
gttgacattg attattgact agttattaat agtaatcaat tacggggtca ttagttcata 600
gcccatatat ggagttccgc gttacataac ttacggtaaa tggcccgcct ggctgaccgc 660
ccaacgaccc ccgcccattg acgtcaataa tgacgtatgt tcccatagta acgccaatag 720
ggactttcca ttgacgtcaa tgggtggagt atttacggta aactgcccac ttggcagtac 780
atcaagtgta tcatatgcca agtacgcccc ctattgacgt caatgacggt aaatggcccg 840
cctggcatta tgcccagtac atgaccttat gggactttcc tacttggcag tacatctacg 900
tattagtcat cgctattacc atggtgatgc ggttttggca gtacatcaat gggcgtggat 960
agcggtttga ctcacgggga tttccaagtc tccaccccat tgacgtcaat gggagtttgt 1020
tttggcacca aaatcaacgg gactttccaa aatgtcgtaa caactccgcc ccattgacgc 1080
aaatgggcgg taggcgtgta cggtgggagg tctatataag cagagctcgt ttagtgaacc 1140
gtcagatcgc ctggagacgc catccacgct gttttgacct ccatagaaga caccgggacc 1200
gatccagcct ccgcggccgg gaacggtgca ttggaacgcg gattccccgt gccaagagtg 1260
acgtaagtac cgcctataga gtctataggc ccacccccct ggcttcttat gcatgctata 1320
ctgtttttgg cttggggtct atacacccccc gcttcctcat gttataggtg atggtatagc 1380
ttagcctata ggtgtgggtt attgaccatt attgaccact cccctattgg tgacgatact 1440
ttccattact aatccataac atggctcttt gcacaactct ctttattggc tatatgccaa 1500
tacactgtcc ttcagagact gacacggact ctgtattttt acaggatggg gtctcattta 1560

ttatttacaa attcacatat acaacaccac cgtccccagt gcccgcagtt tttattaaac 1620
ataacgtggg atctccagcg aatctcgggt acgtgttccg gacatggggc tcttctccgg 1680
tagcggcgga gcttctacat ccagccctgc tcccatcctc ccactcatgg tcctcggcag 1740
ctccttgctc ctaacagtgg aggccagact taggcacagc acgatgccca ccaccaccag 1800
tgtgcccaca aggccgtggc ggtagggtat gtgtctgaaa atgagctc 1848

<210> 33
<211> 1176
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 33
cccgggccca gcaccccaag gcggccaacg ccaaaactct ccctcctcct cttcctcaat 60
ctcgctctcg ctctttttt ttttcgcaaa aggaggggag agggggtaaa aaaatgctgc 120
actgtgcggc gaagccggtg agtgagcggc gcggggccaa tcagcgtgcg ccgttccgaa 180
agttgccttt tatggctcga gcggccgcgg cggcgcccta taaaacccag cggcgcgacg 240
cgccaccacc gccgagaccg cgtccgcccc gcgagcacag agcctcgcct ttgccgatcc 300
gccgcccgtc cacacccgcc gccaggtaag cccggccagc cgaccggggc atgcggccgc 360
ggcccccttcg cccgtgcaga gccgccgtct gggccgcagc ggggggcgca tgggggggga 420
accggaccgc cgtgggggcc gcgggagaag cccctgggcc tccggagatg ggggacaccc 480
cacgccagtt cggaggcgcg aggccgcgct cgggaggcgc gctccggggg tgccgctctc 540
ggggcggggg caaccggcgg ggtctttgtc tgagccgggc tcttgccaat ggggatcgca 600
gggtgggcgc ggcgtagccc ccgccaggcc cggtgggggc tggggcgcca ttgccggtgc 660
gcgctggtcc tttgggcgct aactgcgtgc gcgctgggaa ttggcgctaa ttgcgcgtgc 720
gcgctgggac tcaaggcgct aattgcgcgt gcgttctggg gcccggggtg ccgcggcctg 780
ggctggggcg aaggcgggct cggccggaag gggtggggtc gccgcggctc ccgggcgctt 840
gcgcgcactt cctgcccgag ccgctggccg cccgagggtg tggccgctgc gtgcgcgcgc 900
gccgacccgg cgctgtttga accgggcgga ggcggggctg gcgcccggtt gggaggggt 960
tggggcctgg cttcctgccg cgcgccgcgg ggacgcctcc gaccagtgtt tgccttttat 1020
ggtaataacg cggccggccc ggcttccttt gtccccaatc tgggcgcgcg ccggcgcccc 1080
ctggcggcct aaggactcgg cgcgccggaa gtggccaggg cgggggcgac ttcggctcac 1140
agcgcgcccg gctattctcg cagctcacca tggatg 1176

<210> 34
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 34
cttctggcgt gtgaccggcg gggtttatat cttcccttcc caagcttgg 49

<210> 35
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 35
cttctggcgt gtgaccggcg gggtttatat cttcccttct ctgttcctcc gcagccccaa 60
gcttgg 66

<210> 36
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 36
cttctggcgt gtgaccggcg gggtttatat cttcccttct ctgttcctcc gcagccagcc 60
aagcttgg 68

<210> 37
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 37
cttctggcgt gtgaccggcg gggtttatat cttcccttct ctgttcctcc gcagccagcc 60
atggatgat 69

<210> 38
<211> 1278
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 38
tcgaggtgag ccccacgttc tgcttcactc tccccatctc ccccccctcc ccacccccaa 60
ttttgtattt atttattttt taattatttt gtgcagcgat gggggcgggg gggggggggg 120
cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgaggcg gagaggtgcg 180
gcggcagcca atcagagcgg cgcgctccga aagtttcctt ttatggcgag gcggcggcgg 240
cggcggccct ataaaaagcg aagcgcgcgg cgggcgggag tcgctgcgtt gccttcgccc 300
cgtgccccgc tccgcgccgc ctcgcgccgc ccgccccggc tctgactgac cgcgttactc 360
ccacaggtga gcgggcggga cggcccttct cctccgggct gtaattagcg cttggtttaa 420
tgacggctcg tttcttttct gtggctgcgt gaaagcctta aagggctccg ggagggccct 480
ttgtgcgggg gggagcggct cgggggggtgc gtgcgtgtgt gtgtgcgtgg ggagcgccgc 540
gtgcggcccg cgctgcccgg cggctgtgag cgctgcgggc gcggcgcggg gctttgtgcg 600
ctccgcgtgt gcgcgagggg agcgcggccg ggggcggtgc cccgcggtgc gggggggctg 660
cgaggggaac aaaggctgcg tgcggggtgt gtgcgtgggg gggtgagcag ggggtgtggg 720
cgcggcggtc gggctgtaac ccccccctgc acccccctcc ccgagttgct gcgcacggcc 780
cggcttcggg tgcggggctc cgtgcggggc gtggcgcggg gctcgccgtg ccgggcgggg 840
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gggaggggcg cggcggcccc ggagcgccgg cggctgtcga ggcgcggcga gccgcagcca 960
ttgcctttta tggtaatcgt gcgagagggc gcagggactt cctttgtccc aaatctggcg 1020
gagccgaaat ctgggaggcg ccgccgcacc ccctctagcg ggcgcgggcg aagcggtgcg 1080
gcgccggcag gaaggaaatg ggcggggagg gccttcgtgc gtcgccgcgc cgccgtcccc 1140
ttctccatct ccagcctcgg ggctgccgca gggggacggc tgccttcggg ggggacgggg 1200
cagggcgggg ttcggcttct ggcgttgtac cggcggggtt tatatcttcc cttctctgtt 1260
cctccgcagc cagccatg 1278

<210> 39
<211> 1176
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 39
cccgggccca gcaccccaag gcggccaacg ccaaaactct ccctcctcct cttcctcaat 60
ctcgctctcg ctctttttt ttttcgcaaa aggaggggag agggggtaaa aaaatgctgc 120
actgtgcggc gaagccggtg agtgagcggc gcggggccaa tcagcgtgcg ccgttccgaa 180
agttgccttt tatggctcga gcggccgcgg cggcgcccta taaaacccag cggcgcgacg 240
cgccaccacc gccgagaccg cgtccgcccc gcgagcacag agcctcgcct ttgccgatcc 300
gccgcccgtc cacacccgcc gccaggtaag cccggccagc cgaccggggc atgcggccgc 360
ggcccccttcg cccgtgcaga gccgccgtct gggccgcagc gggggggcgca tgggggggga 420
accggaccgc cgtgggggggc gcgggagaag cccctgggcc tccggagatg ggggacaccc 480
cacgccagtt cggaggcgcg aggccgcgct cgggaggcgc gctccggggg tgccgctctc 540
ggggcggggg caaccggcgg ggtctttgtc tgagccgggc tcttgccaat ggggatcgca 600
gggtgggcgc ggcgtagccc ccgccaggcc cggtgggggc tggggcgcca ttgccggtgc 660
gcgctggtcc tttgggcgct aactgcgtgc gcgctgggaa ttggcgctaa ttgcgcgtgc 720
gcgctgggac tcaaggcgct aattgcgcgt gcgttctggg gcccggggtg ccgcggcctg 780
ggctggggcg aaggcgggct cggccggaag gggtggggtc gccgcggctc ccgggcgctt 840
gcgcgcactt cctgcccgag ccgctggccg cccgagggtg tggccgctgc gtgcgcgcgc 900
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tggggcctgg cttcctgccg cgcgccgcgg ggacgcctcc gaccagtgtt tgccttttat 1020
ggtaataacg cggccggccc ggcttccttt gtccccaatc tgggcgcgcg ccggcgcccc 1080
ctggcggcct aaggactcgg cgcgccggaa gtggccaggg cgggggcgac ttcggctcac 1140
agcgcgcccg gctattctcg cagctcacca tggatg 1176

<210> 40
<211> 1345
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 40
tcgaggtgag ccccacgttc tgcttcactc tccccatctc ccccccctcc ccacccccaa 60
ttttgtattt atttatttttt taattatttt gtgcagcgat gggggcgggg ggggggggg 120
cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgaggcg gagaggtgcg 180
gcggcagcca atcagagcgg cgcgctccga aagtttcctt ttatggcgag gcggcggcgg 240
cggcggccct ataaaaagcg aagcgcgcgg cgggcgggag tcgctgcgtt gccttcgccc 300
cgtgccccgc tccgcgccgc ctcgcgccgc ccgccccggc tctgactgac cgcgttactc 360
ccacaggtga gcgggcggga cggcccttct cctccgggct gtaattagcg cttggtttaa 420
tgacggctcg tttcttttct gtggctgcgt gaaagcctta aagggctccg ggagggccct 480
ttgtgcgggg gggagcggct cgggggggtgc gtgcgtgtgt gtgtgcgtgg ggagcgccgc 540
gtgcggcccg cgctgcccgg cggctgtgag cgctgcgggc gcggcgcggg gctttgtgcg 600
ctccgcgtgt gcgcgagggg agcgcggccg ggggcggtgc cccgcggtgc gggggggctg 660
cgaggggaac aaaggctgcg tgcggggtgt gtgcgtgggg gggtgagcag ggggtgtggg 720
cgcggcggtc gggctgtaac ccccccctgc acccccctcc ccgagttgct gagcacggcc 780
cggcttcggg tgcggggctc cgtgcggggc gtggcgcggg gctcgccgtg ccgggcgggg 840
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gggaggggcg cggcggcccc ggagcgccgg cggctgtcga ggcgcggcga gccgcagcca 960
ttgcctttta tggtaatcgt gcgagagggc gcagggactt cctttgtccc aaatctggcg 1020
gagccgaaat ctgggaggcg ccgccgcacc ccctctagcg ggcgcgggcg aagcggtgcg 1080
gcgccggcag gaaggaaatg ggcggggagg gccttcgtgc gtcgccgcgc cgccgtcccc 1140
ttctccatct ccagcctcgg ggctgccgca gggggacggc tgccttcggg ggggacgggg 1200

cagggcgggg ttcggcttct ggcgtgtgac cggcggctct agagcctctg ctaaccatgt 1260
tcatgccttc ttctttttcc tacagctcct gggcaacgtg ctggttgttg tgctgtctca 1320

tcattttggc aaagaattca agctt 1345

<210> 41
<211> 684
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/Note =
Synthetic Construct

<400> 41
tcaatattgg ccattagcca tattattcat tggttatata gcataaatca atattggcta 60
ttggccattg catacgttgt atctatatca taatatgtac atttatattg gctcatgtcc 120
aatatgaccg ccatgttggc attgattatt gactagttat taatagtaat caattacggg 180
gtcattagtt catagcccat atatggagtt ccgcgttaca taacttacgg taaatggccc 240
gcctggctga ccgcccaacg acccccgccc attgacgtca ataatgacgt atgttcccat 300
agtaacgcca atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaactgc 360
ccacttggca gtacatcaag tgtatcatat gccaagtccg cccctattg acgtcaatga 420
cggtaaatgg cccgcctggc attatgccca gtacatgacc ttacgggact ttcctacttg 480
gcagtacatc tacgtattag tcatcgctat taccatggtg atgcggtttt ggcagtacac 540
caatgggcgt ggatagcggt ttgactcacg gggatttcca agtctccacc ccattgacgt 600
caatgggagt ttgttttggc accaaaatca acgggacttt ccaaaatgtc gtaataaccc 660
cgccccgttg acgcaaatgg gcgg 684

<210> 42
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 42
attttaaaat tcaggcctcg a 21

<210> 43
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 43
catagcgttg gctacccgtg a 21

<210> 44
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 44
cattctgcag cggtgcacgg c 21

<210> 45
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 45
gagaaccaag caacgacaaa atacc 25

<210> 46
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 46
gcattagaaa cagtccagcc catac 25

<210> 47
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 47
cgagtgacaa gcctgtagcc 20

<210> 48
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 48
ggttgacttt ctcctggtat gag 23

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =

synthetic construct

<400> 49
atgttctctg ggaaatcgtg 20

<210> 50
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 50
gaaggactct ggctttgtct t 21

<210> 51
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 51
cagtcgtccg cttccgctac 20

<210> 52
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 52
agaaattggc tccgtggtcc c 21

<210> 53
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 53
agtcctgcca gaatttgata cc 22

<210> 54
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 54
attccacgtt cgaccatcc 19

<210> 55
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 55
tttttccagt tccgtttatc c 21

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 56
tttatcgcca atccacatct 20

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 57
accacagtcc atgccatcac 20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 58
tccaccaccc tgttgctgta 20

<210> 59
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 59
tggtggagcg atttgtctgg tt 22

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 60
tagtagcgac gggcggtgtg 20

<210> 61
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 61
caccccaagg accccaagga gat 23

<210> 62
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 62
cgacgccgct cagaagaacc ac 22

<210> 63
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 63
cagcaggtgt cccaaagaa 19

<210> 64
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 64
cttgaggtgg ttgtggaaaa g 21

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 65
cccaagtgct gccgtcattt 20

<210> 66
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 66
gataggctcg cagggatgat ttc 23

<210> 67
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 67
tctctttcta cctcagactc tttgaa 26

<210> 68
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 68
gactcctttt ccgcttcctg 20

<210> 69
<211> 1986
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 69
tcctcctctg ctcgcccaat ccttccaacc ccctatggtg gtatggctga cacagaaaat 60
gtctgctcct gtatgggaca tttgcccctc ttctccaaat ataagacagg atgaggccta 120
gcttttgctg ctccaaagtt ttaaaagaac acattgcacg gcatttaggg actctaaagg 180
gtggaggagg aatgagggaa ttgcatcatg ccaaggctgg tcctcatcca tcactgcttc 240
cagggcccag agtggcttcc aggaggtatt cttacaaagg aagcccgatc tgtagctaac 300
actcagagcc cattttcctg cgttaacccc tcccgacctc atatacagga gtaacatgat 360
cagtgacctg ggggagctgg ccaaactgcg ggacctgccc aagctgaggg ccttggtgct 420
gctggacaac ccctgtgccg atgagactga ctaccgccag gaggccctgg tgcagatggc 480
acacctagag cgcctagaca aagagtacta tgaggacgag gaccgggcag aagctgagga 540
gatccgacag aggctgaagg aggaacagga gcaagaactc gacccggacc aagacatgga 600
accgtacctc ccgccaactt agtggctcct ctagcctgca gggacagtaa aggtgatggc 660
aggaaggcag cccccggagg tcaaaggctg ggcacgcggg aggagaggcc agagtcagag 720
gctgcgggta tctcagatat gaaggaaaga tgagagaggc tcaggaagag gtaagaaaag 780
acacaagaga ccagagaagg gagaagaatt agagagggag gcagaggacc gctgtctcta 840
cagacatagc tggtagagac tgggaggaag ggatgaaccc tgagcgcatg aagggaagga 900
ggtggctggt ggtatatgga ggatgtagct gggccaggga aaagatcctg cactaaaaat 960
ctgaagctaa aaataacagg acacggggtg gagaggcgaa aggagggcag attgaggcag 1020
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tctttttcca ggaggccara gatgctgacc tcaagaactc ataatacccc agtggggacc 1140
accgcattca tagccctgtt acaagaagtg ggagatgttc ctttttgtcc cagactggaa 1200
atccattaca tcccgaggct caggttctgt ggtggtcatc tctgtgtggc ttgttctgtg 1260
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cgcccgggcc cttcccccac ccgttcggtt ccccaccacc acccgcgctc gtacgtgcgt 1620
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taggcgccgc cccctgccca ccccccgccc gcgctgggag ccgcagccgc cgccactcct 1740
gctctctctg cgccgccgcc gtcaccaccg ccaccgccac cggctgagtc tgcagtcctc 1800
gaggaactga aaaaccagaa agttaactgg taagtttagt ctttttgtct tttatttcag 1860
gtcccggatc cggtggtggt gcaaatcaaa gaactgctcc tcagtggatg ttgcctttac 1920
ttctaggcct gtacggaagt gttacttctg ctctaaaagc tgcggaattg tacccgcggc 1980
caagct 1986

<210> 70
<211> 3633
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 70
tctagaatat agaagccaag gatttcaagg gtttccttt ctctcttctt ctttttttt 60
ctttttcttt ttcctgagat ggagtttcct tttgtagccc tgactgtcct ggaattcact 120
ctatagacca ggctagcctc acacttagtg atctgcctgc ctctgcctct tgggtgcctc 180
aggattcaag gcatgaacca ccactacccg accagggatt tcttacacac ttctgactgg 240
actaaccagg aaagcagaga gggagacagg aagaaaatgc tcagaaggaa ggagtaggat 300
tggaggtgag ctgggggaac ccagactgag ccgtgcagaa gacaaggaag aagaaagcca 360
cccacacacc taggatccac ccacagattt tgctctgggt acccctgtct ggagactgta 420
gggctttgtg atggagggtg gggtagtctt catgccccgt gccctttact ccagacctaa 480
atgcccaccc ccacatacag ctgctcgctc tctctctccc ctgcccttct cccaagagac 540
cagttctcca tccctggtct gcagccaagg ctgggggcag aagaactttc tggaggattt 600
gagtgagaaa agcaagagag cctcaagtag ggactggaac ctctgggaag ggagtgcaga 660
ggagacccgg gtatgtgccc tacctggtac atttatacct gggcagcctc tgctcctgtt 720
ccagacttca gagcccagac gggtcctctc cctccctcat gaggggaaac atttggggaa 780
atttggagag agacagaact cagagctcag cactttcctc tttctgtttt tcttcttgag 840
gaatttttc ccccaactgc tgatgacttt accattcttg ggggtggggg ggtggagatt 900

ctggcttttg ctccccctac actccaagtg ccggacaaag ccctacattc cacaagaagc 960
cagggcttca gagtttccta aagatgaggt ggcgtggcga gtctcctccc tctcccagct 1020
ccaactcccc ctcccccagt ctccagccct agcctggcca gggaggcccc gccaggctgg 1080
gaggagaccc caagcacatt cttcctctcg ctgtcatgct gcagaaatta aagacacatc 1140
tctgagctgg gtacccgcca atcgtttcaa gttgagaagt ggcagaggag gtcccgagct 1200
tcagctcatg ccacgtgtaa aggaagcttg gaacccactg cccacaactc ctggggcaaa 1260
aacctggagt cagacatggg gtgaaggctg tcacacggca cagacacgtc aagcaccccc 1320
cccaattcta gtagtctcct agcctccacc agaaccccag acccttgatg tggcagtcac 1380
cagtccacac ctgttaggct cttgtctctt cttccagatg agcctggggg gcgtgggggt 1440
gctagatcag gagcagggaa aagtagcttt ggataagtgc ttttcccaat acaaaaccca 1500
acaaagagtg ggcagatcac actgtgtagt gcttcgtgga accctaccct agacaactgc 1560
cttgaacacc tattccctct gatgtacacc atccccgtcc actgttaggg agtgggcatc 1620
ctttggaact gaccactgtg gaaggcagga ctttactgag ttccggaact accatctcag 1680
cttctcagcc ccagccttac cctacaggca ctggcatagg cgggggcaga tcctgggcca 1740
caagtcactg ccacatggtt gggataattg atgaagtcct gtccttccat tgctgtctcc 1800
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tctgccaccc cacccgcacc gcttagccta actgcccacg gccagcgacg tggctccctc 1920
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ctcagggagg gcgtgaaggg gggggagcca atggaatctt ggatggtttg gaggaggcgg 2040
gactccttgc ttccacgttt acagctctga agacggctgt gggggaagtg atacaggacg 2100
tctatgggcc ctgagaggag acccctatgc ttccctgcca cccacacagt ttaacaaaat 2160
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gggaaagaaa ggacactgtc ttttagggac acatttaaat ataagccact tttcttgggg 2280
gacgacaaat gacccttttcc tgattgcaga ggtggggaac aatggctgag attttcagca 2340
aagaagcgag gacatgagga gtagccttca aataaagtca ctcagctacc aaaaacaagt 2400
ttctgccaca caccgagtta cctaggtgtc cccagaccag atccaagtac agtaaggaaa 2460
gcaggttctc tacagagaga acacggctct atggccaatg ccttctacct gctctttctg 2520
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caagaccttt ttctaagaca tccctggtca caggcctcct gtagcaaatt ccagccctgg 2640
gatggaggtg gtcaggaaag agtttataca agaagaccca ggccacagct ttaaggactc 2700
agaaaccccc ctgcccacac ggctgcccat cataacgcag aaggtttctt ctggaaggac 2760
aaggatgtca aacttctccc caagcctaat cctcagagat gtctccctct gttacacctg 2820
gggctggaga aaggtgggtc tttcatggag ccacattcat ggcagaacag atagccaccc 2880
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aacagtcaca tctgcttagc tgcctggttc ttcggatttg gagagatgct tgcctaactt 3060
attcttcctt aggtcttccc aaggatgcca gaaagactat gagacatggc caagaggacc 3120
ttttcccaat tgtgcctgac actgaaccct ttgtaatgtt ccccaactca gattcccaat 3180
tctacatcct tctgatttga ggtcccagaa ggaaagtgca aggggcatcc cctacccaca 3240
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gggacaaggg tggcagaatt gcaaaggggg gaggggggctg ggtggactcc tttcccttcc 3360
tttccctcct ccccccctctt cgttccaaat tgggggccgg gccaggcagt tctgattggc 3420
tgggggccgg gctgctggct ccccctctcc aagaggcagg gttcctccca gccctcctcc 3480
atcaggatgg tataaaaggg gcccaggcca gtcgtcggag cagacgggag tttcacctcc 3540
ggacggagca ggaggcacac ggagtgaggc cacgcatgag ccgaagctaa ccccccaccc 3600
cagccgcaaa gagtctacat gtctagggtc tag 3633

<210> 71
<211> 3633
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 71
tctagaatat agaagccaag gatttcaagg gtttcctttt ctctcttctt ctttttttt 60
ctttttcttt ttcctgagat ggagtttcct tttgtagccc tgactgtcct ggaattcact 120
ctatagacca ggctagcctc acacttagtg atctgcctgc ctctgcctct tgggtgcctc 180
aggattcaag gcatgaacca ccactacccg accagggatt tcttacacac ttctgactgg 240

actaaccagg aaagcagaga gggagacagg aagaaaatgc tcagaaggaa ggagtaggat 300
tggaggtgag ctgggggaac ccagactgag ccgtgcagaa gacaaggaag aagaaagcca 360
cccacacacc taggatccac ccacagattt tgctctgggt acccctgtct ggagactgta 420
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